

## CLAIMS

What we claim is:

1. A system for multi-tier multi-casting via a public communication network, comprising:
  - 5 a content server adapted to multi-cast predetermined content via the public communication network, wherein the content server comprises a first tier;
  - a first client server adapted to receive the content multi-cast by the content server via the public communication network, and to multi-cast the received content via a first private communication network, wherein the first client server comprises a second tier; and
  - 10 a first client adapted to receive the content multi-cast by the first client server via the first private communication network.
2. The system of claim 1 further comprising:
  - 15 a second client server adapted to receive the content multi-cast by the content server via the public communication network, and to multi-cast the received content via a second private communication network, wherein the first and second client servers comprise said second tier; and
  - a second client adapted to receive the content multi-cast by the second client server via the second private communication network.
- 20 3. The system of claim 2 further comprising:
  - a third client adapted to receive the content multi-cast by the second client server via the second private communication network.
4. The system of claim 1 further comprising:
  - 25 a third client adapted to receive the content multi-cast by the first client server via the first private communication network.

5. A method for multi-tier multi-casting via a public communication network, the method comprising the steps of:

multi-casting predetermined content via the public communication network;

5 receiving the content multi-cast via the public communication network, and multi-casting the received content via a first private communication network; and

receiving the content multi-cast via the first private communication network.

10 6. The method of claim 5 further comprising:

receiving the content multi-cast via the public communication network, and multi-casting the received content via a second private communication network; and

15 receiving the content multi-cast via the second private communication network.

7. A method for reliably communicating content via a public communication network, the method comprising the steps of:

receiving content for communication via the public communication network;

5 dividing the received content into a plurality of datagrams, each datagram comprising a respective portion of the content and a sequentially assigned sequence number indicative of the relationship of said content portion to said content;

transmitting each datagram via the public communication network using  
10 User Datagram Protocol (UDP);

receiving a datagram transmitted via the public communication network using UDP;

storing the content portion of the received datagram in a location corresponding to the sequence number thereof;

15 if the content portion of the received datagram is the not next sequential portion of the content:

transmitting, via the public communication network, a request to transmit at least said next sequential content portion via the public communication network;

20 receiving said request and, in response thereto, transmitting said requested at least next sequential content portion via the public communication network using Transmission Control Protocol (TCP);

receiving said requested at least next sequential content portion  
25 transmitted via the public communication network using TCP;  
and

storing the received at least next sequential content portion in a location corresponding to the sequence thereof; and



8. A system for reliably communicating content via a public communication network, the system comprising:

a content server adapted to:

receive content for communication via the public communication network;

divide the received content into a plurality of datagrams, each datagram comprising a respective portion of the content and a sequentially assigned sequence number indicative of the relationship of said content portion to said content;

transmit each datagram via the public communication network using User Datagram Protocol (UDP); and

receive, via the public communication network, a request to transmit at least said next sequential content portion via the public communication network, and, in response thereto, transmit said requested at least next sequential content portion via the public communication network using Transmission Control Protocol (TCP);

a client server adapted to:

receive a datagram transmitted via the public communication network using UDP;

store the content portion of the received datagram in a location corresponding to the sequence number thereof;

if the content portion of the received datagram is the not next sequential portion of the content:

transmit, via the public communication network, said request to transmit at least said next sequential content portion via the public communication network;

receive said requested at least next sequential content portion  
transmitted via the public communication network using  
TCP; and

store the received at least next sequential content portion in a  
5 location corresponding to the sequence thereof; and

present the stored content portions in accordance with the sequence  
numbers thereof.